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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,237	12/03/2003	Jean-Paul Mardon	12928/10022	7515
23280	7590	05/18/2009		
Davidson, Davidson & Kappel, LLC			EXAMINER	
485 7th Avenue			SHEEHAN, JOHN P	
14th Floor				
New York, NY 10018			ART UNIT	PAPER NUMBER
			1793	
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			05/18/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/728,237

**Applicant(s)**

MARDON ET AL.

**Examiner**

John P. Sheehan

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7 to 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sabol et al. (Sabol '023, US Patent No. 4,649,023, cited in the IDS submitted March 18, 2004) in view of Rebeyrolle et al. (Rebeyrolle '050, US Patent No. 5,832,050, cited in the IDS submitted March 18, 2004) and Dumas et al. (Dumas '419, US Patent No. 5,478,419, cited by the Examiner).

Sabol '023 teaches a method of making tubes for use in nuclear reactors (Abstract and column 1, lines 35 to 45) from zirconium base alloys comprising 0.5 to 2.0% niobium, up to 1.5% tin, and up to 0.25% iron, chromium or vanadium (Abstract). Sabol '023 also teaches that the disclosed zirconium alloys can contain 1000-1600 ppm oxygen, carbon in amounts less than 100 ppm and silicon in an amount of less than 80 ppm. Sabol '023 teaches a process comprising heating the zirconium alloy to a temperature of 950 to 1000°C, quenching the alloy, extruding the alloy at a temperature of about 700°C, cold rolling the alloy with intermediate annealing at a temperature of

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about 600°C and final annealing the alloy at a temperature of less than about 650°C (see column 3, lines 10 to 60 and column 6, lines 49 and 50). Thus, with the exception of the sulfur content of the zirconium alloy, Sabol teaches the applicants' claimed process.

Rebeyrolle '050 teaches that 8 to 100 ppm and preferably 8 to 30 ppm of sulfur (Abstract) improves the creep behavior and the corrosion resistance (column 8, lines 19 to 34) of zirconium alloys that are used on nuclear reactors (Abstract).

Dumas '419 teaches that to protect zirconium alloys from oxidation during heat treatment it is standard practice to use an inert atmosphere (Dumas '419, column 1, lines 45 to 50).

The claims and Sabol '023 differ in that Sabol '023 does not teach that the zirconium alloy contains sulfur or heat treating the zirconium alloy in an inert atmosphere or a vacuum.

However, one of ordinary skill in the art at the time the invention was made would have been motivated to add sulfur to Sabol '023's zirconium alloy so as to improve the creep behavior and the corrosion resistance of Sabol '023's disclosed zirconium alloy as taught by Rebeyrolle '050 and to heat treat the zirconium alloy in an inert atmosphere so as to prevent oxidation of the zirconium alloy as taught by Dumas '419.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

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obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 7 to 11 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claims 13 to 16 of copending Application No. 10/885,927. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed process recited in these two sets of claims overlaps. A prima facie case of obviousness exists when the ranges of a claimed invention overlap the ranges disclosed in the prior art *In re Geisler* 43 USPQ2d 1365 (Fed. Cir. 1997); *In re Woodruff*, 16 USPQ2d 1934 (CCPA 1976); *In re Malagari*, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05. .

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Response to Arguments***

1. It is noted that the use of Tanner '992 in the prior art rejection has been withdrawn in view applicants' arguments.
5. Applicant's arguments filed January 21, 2009 regarding the rejection of the claims over Sabol '023 in view of Rebeyrolle '050 and Dumas '419 have been fully considered but they are not persuasive.
6. Applicants' argument that Dumas '419 is directed to a "flat product which is inapplicable to the manufacture of a tube as presently claimed" is not persuasive. Although Dumas '419 is directed to making a flat product, the flat product is a zirconium alloy as is the alloy recited in the instant claims. Dumas teaches that to prevent oxidation of the zirconium alloy during heat treatments the zirconium alloy should be heat treated in a inert atmosphere (column 1, lines 47 to 50). Whether or not a zirconium workpiece is flat or tubular would not be expected to be determinative of whether or not the zirconium alloy would oxidize during heat treatment. Thus, if the prior art, such as Dumas '419 teaches that an inert atmosphere should be used during heat treatment of a flat zirconium alloy to prevent oxidation it would stand to reason that an inert atmosphere should be used in the heat treatment of any shape of zirconium alloy to prevent oxidation, including tubular zirconium alloys as recited in the instant claims. Further, in making this argument applicants have not explained why a difference in shape of the zirconium alloy makes Dumas '419's teachings regarding oxidation prevention in the heat treatment of zirconium alloys inapplicable to the manufacture of a zirconium alloy tube as presently claimed.

Applicants' argument that, "There is no reason or motivation that one of skilled in the art would modify Sabol in view of Rebeyrolle and the flat products of Dumas" is not persuasive. As set forth in the statement of the rejection, Dumas teaches that to prevent oxidation of the zirconium alloy during heat treatments the zirconium alloy should be heat treated in an inert atmosphere (column 1, lines 47 to 50). Further, as set forth in the statement of the rejection the motivation to employ an inert atmosphere is to prevent oxidation of the zirconium alloy as taught by Dumas '419. It is the Examiner's position that the prevention of oxidation is clear motivation.

7. Applicants' statement that "Tubes used in nuclear reactors require different manufacturing processes due to their compositions" is not persuasive. Applicants have not explained how this statement distinguishes the claims from the prior art relied on in the rejection.

8. Applicants' arguments beginning at the bottom of page 6 and carrying over to page 7 of their response are not persuasive in that it is not clear which of the reference(s) applicants are addressing or what the point is that applicants are attempting to make with respect to any specific reference(s).

### ***Conclusion***

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (7:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John P. Sheehan/  
Primary Examiner, Art Unit 1793

jps